

CLAIMS

1. Device for determining the quality of imaging of printing plates, comprising an optoelectronic sensor for detecting a reference mark (wedge or block), which is arranged on the printing plate within or outside of a printing area and which has different reference fields, as well as an evaluation device for evaluating measured values detected by the sensor, the sensor is designed for detecting at least two reference marks arranged on the printing plate, wherein the reference marks each have a reference field combination made from at least one tone value reference field and at least one structured reference field, or at least one of the reference marks has at least one tone value reference field and at least an other one of the reference marks has at least one structured reference field.
2. Device according to claim 1, wherein the two or more reference marks are identical in terms of the reference fields.
3. Device according to claim 1, wherein the two or more reference marks are different in terms of the reference fields.
4. Device according to claim 1, wherein two of the reference marks are provided, which are spaced apart from each other in a direction of advance or processing of a printing plate processing device producing the plate imaging and are arranged on at least approximately diagonally opposite areas of the printing plate.
5. Device according to claim 1, wherein the sensor has a number of detectors corresponding to a number of the reference marks of the printing plate.
6. Device according to claim 1, wherein the evaluation device evaluates combinations of measured values from individual ones of the reference fields that are preset or that can be preset from one or more of the reference marks and the

evaluation device has a diagnosis system for diagnosing possible causes of errors depending on the measured values or the combination of measured values.

7. Device according to claim 6, wherein the evaluation device has a display or a similar output unit for displaying the measured values or analysis or diagnosis data determined with reference to the measured values.

8. Device according to claim 7, wherein the evaluation device has a data memory for the determined measured values and/or the analysis data determined from the values.

9. Device according to claim 1, wherein the evaluation device has a desired value memory for different printing technologies and that an input device is provided for selecting and setting desired values to be used by the evaluation device.

10. Device according to claim 1, wherein the device is integrated into a printing plate processing device.

11. Device according to claim 1, wherein the evaluation device has a signal output connected to the printing plate processing device for stopping the printing plate processing device.

12. Device according to claim 1, wherein the structured reference fields have regular, irregular, symmetric, and/or asymmetric figure patterns.

13. Device according to claim 1, further comprising it has at least one additional optoelectronic sensor for detecting at least one identification mark, which is arranged on the printing plate and which is provided in plain text or in coded form, the optoelectronic sensor or sensors are adapted for detecting at least one such identification mark.

14. Method for determining the quality of imaging of printing plates, comprising: optically detecting a reference mark on a printing plate and comparing resulting measured values with desired values, the measured values are detected from at least two of the reference marks with at least one tone value field and at least one structured field and absolute measured values of the reference marks are stored and compared with desired values stored in an evaluation device.
15. Method according to claim 14, further comprising analyzing the measured values of several printing plates detected one after the other in a time-value profile.
16. Method according to claim 14, further comprising comparing the measured values or combinations of at least two measured values automatically with values from a diagnosis table for determining possible causes of poor quality in the plate imaging of the printing plate.
17. Method according to claim 14, further comprising outputting the measured values and/or diagnosis data determined with reference to the measured values on an output unit.
18. Method according to claim 14, wherein information from edge areas of adjacent reference fields and/or from the edges of the reference fields is also used for determining a quality of the plate imaging by the printing plates.
19. Method according to claim 14, wherein the device includes an optoelectronic sensor for detecting a reference mark (wedge or block), which is arranged on the printing plate within or outside of a printing area and which has different reference fields, as well as an evaluation device for evaluating measured values detected by the sensor, the sensor is designed for detecting at least two reference marks arranged on the printing plate, wherein the reference marks each have a reference

field combination made from at least one tone value reference field and at least one structured reference field, or at least one of the reference marks has at least one tone value reference field and at least another one of the reference marks has at least one structured reference field.

20. Reference mark comprising different reference fields for determining a quality of imaging of printing plates, including a reference field combination made from at least one tone value field and at least one structured field.

21. Reference mark according to claim 20, wherein edge regions of individual ones of the reference fields and/or transition regions of adjacent ones of the reference fields form additional auxiliary reference fields.

22. Reference mark according to claim 20, wherein the reference mark has multiple, reference fields arranged as a matrix.

23. Reference mark according to claim 20, wherein the reference mark has a combination of structured reference fields with regular, irregular, symmetric, and/or asymmetric figure patterns.

24. Reference mark according to claim 20, wherein the reference mark has a width of approximately 5 mm to 7 mm and a height of approximately 4 mm to 5 mm.

25. Reference mark according to claim 20, wherein the reference mark has an identification mark for unique identification of a corresponding printing plate or an identification mark is allocated to the reference mark.

26. Reference mark according to claim 20, wherein the identification mark is a plain text label or a coded label.

27. Printing plate with at least two reference marks, comprising:

a plate and imaging located thereon; and

at least two reference marks arranged on the printing plate, wherein the reference marks each have a reference field combination made from at least one tone value reference field and at least one structured reference field, or at least one of the reference marks has at least one tone value reference field and at least one other one of the reference marks has at least one structured reference field.